

Appl. No. 09/978,253
Amendment fax-filed on August 16, 2004
Reply to Office Action of June 22, 2004

PATENT

REMARKS/ARGUMENTS

Claims 15-20, 22, and 24-27 remain pending. Prior claims 15 and 18-22 were rejected as allegedly being unpatentable over the cited art. Claim 22 was rejected as allegedly lacking written description support. Claims 16 and 17 were withdrawn. Re-examination and reconsideration of the claims, as amended, are respectfully requested.

Interview Summary

Applicants thank Examiner Rollins for the courtesy shown to Applicants' undersigned representative in a telephone interview conducted for this case on August 4, 2004. Applicants discussed prior claims 22 and 15, and reviewed the disclosure of the originally filed specification (particularly page 14, second full paragraph) along with the disclosure of U.S. Patent No. 6,235,019 to Lehmann et al. Agreement regarding allowable claim language was *not* reached, although the Examiner did agree to consider amendments such as those made herein, and more specifically identified the "while" language of claim 22 as a basis for the prior rejection under 35 U.S.C. Section 112, first paragraph (written description).

Rejection under 35 U.S.C. Section 112, first paragraph

Claim 22 was rejected under 35 U.S.C. Section 112, first paragraph, as allegedly lacking sufficient written description in the originally-filed specification. The final paragraph of claim 22, as amended herein, reads as follows:

cooling the vessel wall with the balloon by coating at least a portion of an inner surface of the balloon wall with a liquid so that the liquid coating vaporizes, while the coating ~~engages~~ engaging the balloon wall within the balloon.

Applicants respectfully submit that this rejection is traversed in part and overcome in part as follows. The second full paragraph on page 14 of the originally filed specification for this case states:

Cryogenic cooling fluid may optionally pass through a Joule-Thompson orifice adjacent port 83 to effect cooling. In other

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embodiments, at least a portion of the cryogenic cooling fluid may exit port 83 into the balloon as a liquid. The liquid will vaporize within the balloon, and the enthalpy of vaporization can help cool the surrounding vessel wall. The liquid may coat at least a portion of the balloon wall so as to enhance even cooling over at least a portion of the vessel wall. Hence, ports 83 may have a total cross section which is smaller than a cross section of the fluid supply lumen, or which is at least as large as the cross section of the fluid supply lumen.

Analyzing this disclosure beginning with the second sentence of the above paragraph, the written description of the subject application thereby explains that:

1. *At least a portion of the cryogenic cooling fluid may flow into the balloon as a liquid.*
2. *The liquid will vaporize within the balloon.*
3. *The enthalpy of vaporization can help cool the surrounding blood vessel.*
4. *The liquid may coat at least a portion of the balloon wall.*
5. *The liquid coating may enhance even cooling of the vessel wall.*

Hence, those of skill in the art, when reading the disclosure of the originally filed specification, would understand that Applicants had possession of a method in which a liquid both coats at least a portion of the inner surface of the balloon and, through vaporization, that the coating would cool the vessel wall. Hence, the specification does provide a written description support sufficient to comply with the requirements of Section 112, first paragraph.

Applicants note that claim 22 has been amended to remove the "while" language of the prior claim 22. Although Applicants believe that those of skill in the art, when present with the above disclosure, would understand that coating and cooling can occur simultaneously, Applicants are eliminating this language (and thus effectively broadening the claim) to expedite issuance of this application.

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Claim Rejections Under 35 U.S.C. Section 103

Prior claims 15 and 18-22 were rejected under 35 U.S.C. Section 103(a) as allegedly being unpatentable over U.S. Patent No. 5,868,735 to Lafontaine in view of U.S. Patent No. 6,235,019 to Lehmann et al. Applicants note that the Lehmann et al. and Lafontaine references have not been shown to teach or reasonably suggest the use of a liquid coating at least a portion of an inner surface of a balloon as recited by claim 22. Hence, claim 22 is patentable over these references.

Regarding the prior rejections of claim 15 (and the dependent claims which depend therefrom), Applicants note that claim recites expanding fluid at first and second locations within the balloon which are circumferentially separated, with the expansion at the second location being done so as to evenly cool the engaged vessel wall surrounding the balloon. Such circumferentially even cooling does not appear to be disclosed in either of the cited references. Nonetheless, Applicants are amending claim 15 to depend from claim 22 so as to expedite prosecution of this application. Hence, claims 15-20 are allowable as depending from an allowable base claim, as well as for the novel elements recited therein.

Added Claims

Applicants have added new claims 24-27 to more fully claim the present invention. Claim 24 is similar to claim 22, with language of the final element of claim 24 taken more directly from the above-quoted portion of the specification from page 14. Claims 25 and 26 recite additional aspects of the method described on page 14, particularly in the numbered paragraphs above. Claim 27 recites "while" language similar to that of prior claim 22.

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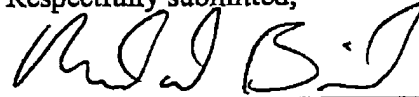
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CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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Attachments
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